

Shallow Water Hydroids from Eastern Bass Strait

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Introduction

Previous records of hydroids from Bass Strait east of Wilsons Promontory include four species collected by the *Challenger* Expedition (1873-76) from a depth of 70 m off Moncoeur Island (Allman 1888) and four species from the *Endeavour* trawlings in 146-546 m on the eastern slope (Bale 1915). Five species from a depth of 82 m, described by Busk (1852) from the voyage of the *Rattlesnake*, may have been dredged in Banks Strait, off the north-eastern coast of Tasmania.

Until 1915, only three species *Sertularia unguiculata* (Busk 1852), *Stereothea elongata* (Lamouroux 1816) and *Amphisbetia operculata* (Linnaeus 1758) were recorded from depths of less than 60 m in eastern Bass Strait, the first two from Banks Strait (Busk 1852), *S. unguiculata* from Sealers Cove on the eastern side of Wilsons Promontory (Bale 1884) and *A. operculata* from near Devonport (Bale 1915). The few eastern Victorian shallow water records from previous Australian researchers (e.g. Bale, Spencer, Bartlett, Mulder and Trebilcock) probably reflects the inaccessibility of much of this part of the coastline to earlier workers.

This paper lists hydroids recorded to depths of 60 m in eastern Bass Strait. Most of the material was collected by the author, using SCUBA. The list includes collections from the Kent Group (1974 and 1993) (KGI), from shallow reefs off the Ninety Mile Beach (Woodside Beach to Delray Beach, 1977-1992) (NMB), from Gabo Island; Iron Prince reef and Mallacoota in the east (1973-1975) (GBI), from the Halibut and Marlin oil production platforms in central eastern Bass Strait (1974) (HMP), from the Seal Islands Group and the Nooramunga Reserve near Wilsons Promontory (1983-1992) (NOR) and near Flinders Island (FLI). Localities are shown in Fig. 1.

The list includes 9 species of athecate hydroids and 73 species of thecate hydroids. No doubtful or undescribed species are listed nor has any taxonomic revision been attempted in this paper. Species are listed with locality, depth range of collection and substrate notes where available. These provide an indication of the bathymetric range and habitat preferences of each species.

Ecological notes

While all but one of the records are from the sublittoral zone, some of the epiphytic species listed may be expected to also occur on algae in tide pools on rocky shores in far eastern Victoria. The list gives no indication of the abundance or rarity of species; for example, the very small species, *Calamphora parvula* recorded for the first time from Bass Strait since its original description (Allman 1888), is rare, whereas the large plumose species, *Aglaophenia divaricata*, is very common on coastal reefs.

Some species, for example *Obelia geniculata*, *Silicularia rosea*, *Orthopyxis caliculata* and *Aglaophenia setaceoides*

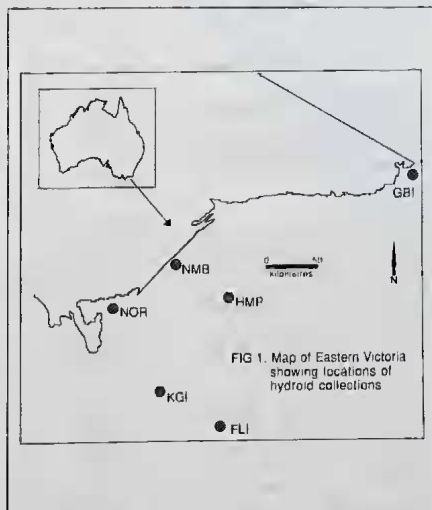


Fig. 1. Map of eastern Victorian showing locations of hydroid collections.

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are epiphytes on brown algae, the most important associations being with *Phyllospora comosa*, *Ecklonia radiata* and *Sargassum* spp. Other species such as *Aglaophenia plumosa*, *Halecium delicatulum* and *Halopteris campanula* are epizooites on other invertebrates including bryozoans, many species of sponges and the solitary ascidians *Herdmania momus* (Savigny), *Pyura australis* (Quoy and Gaimard) and *Pyura stolonifera* (Heller). Larger forms including *Aglaophenia divaricata*, *Aglaophenia whiteleggei* and *Gynnaugium superbium*, while listed as epilithic, frequently grow from a rootstock directly attached to rocky substrate. Their larvae may, however, have originally settled on small invertebrates on the rock surface. *Nemertesia waltzi* and *Amphisbetia operculata* are usually not associated with reefs and often form large colonies growing on fragments of shell and rubble in open waters, especially in places of strong current flow. *Clytia hemisphaerica*, a small opportunis-

tie species, favours many different substrates, and rich colonies may grow on artificial surfaces such as buoys or raft on fragments of the seagrass *Heterozostera tasmanica* drifting in ocean currents.

Size, habit and colour are all characteristics useful for recognition of hydroids to generic, and often to specific level. Most epiphytes are stolonial, the colonies usually growing close to the algal thallus; in general these species tend to be white in colour, or almost colourless. Erect-growing species, irrespective of habit, are often brightly coloured. *Aglaophenia divaricata* forms dense brown to black feathery colonies which may grow to 20 cm high while a similar species, *Lytocarpus whiteleggei*, is white. *Halopteris campanula* is laey in habit and bright orange in colour; *Sertularia macrocarpa* forms large colonies that are silvery white *in situ* but appear black out of the water. Most species of *Gynnaugium* have tall plumose stems that vary from green to brown in colour.

Table 1. Hydroid species recorded from depths of 0-60 m from eastern Bass Strait.

Species	Locality	Depth, m	Substrate notes
ATHECATA			
Family Hydractiniidae			
<i>Stylactis betkensis</i> Watson, 1978	GBI	0-1	on gastropod <i>Parcanassa burrhardi</i>
Family Coryniidae			
<i>Sarsia radiata</i> Lendenfeld, 1884	NMB HMP	3-10	buoy lines and mussels (<i>Mytilus planulatus</i>)
Family Bougainvillidae			
<i>Bougainvillia ramosa</i> (Van Beneden, 1844)	NMB	3	buoy lines, mussels (<i>Mytilus planulatus</i>)
Family Eudendriidae			
<i>Eudendrium terranova</i> Watson, 1985	NOR	10	epilithic, in cavern
<i>Eudendrium generale</i> Lendenfeld, 1885	FLI	25	from scallop dredge
<i>Eudendrium merdum</i> Watson, 1985	NOR	6	bryozoan in cavern
<i>Eudendrium balei</i> Watson, 1985	NMB	15	epilithic
THECATA			
Family Halecidae			
<i>Hydrodendron australis</i> (Bale, 1919)	KGI	3-14	sponge, compound ascidian
<i>Hydrodendron armatum</i> (Stechow, 1924)	KGI	3-33	brown alga
<i>Halecium delicatulum</i> Coughrey, 1876	NOR HMP GBI	3-23	barnacles, red algae, sponge, ascidian
<i>Halecium sessile</i> Norman, 1867	KGI HMP	10	barnacles
<i>Halecium brownensis</i> Watson, 1975	GBI	12	ascidian (<i>Herdmania momus</i>)
<i>Halecium fragile</i> Hodgson, 1950	HMP	36	solitary ascidian
<i>Halecium beanii</i> (Johnson, 1838)	HMP GBI	17-20	barnacles
<i>Halecium luteum</i> Watson, 1975	KGI	14	epilithic, caverns
Family Lafoeidae			
<i>Hebella scandens</i> (Bale, 1888)	KGI	14-20	hydroid (<i>Amphisbetia geminata</i>)
<i>Lafoea amirantensis</i> Millard & Bouillon, 1973	NMB	3	hydroid (<i>Tubularia exoniia</i>), mussels (<i>M. planulatus</i>)
<i>Lafoea fruticosa</i> (M. Sars, 1851)	FLI	54	fishing nets
<i>Filicium serpens</i> (Hassall, 1848)	KGI	28	red alga (<i>Jeanneretia</i> sp.)
Family Campanulariidae			
<i>Obelia geniculata</i> Linnaeus, 1758	KGI GBI	3-17	brown alga (<i>Ecklonia radiata</i>)
<i>Obelia australis</i> Lendenfeld, 1885	KGI HMP NMB NOR	6-65	sponge, ascidian, barnacles mussel (<i>M. planulatus</i>)

Species	Locality	Depth, m	Substrate notes
<i>Obelia bidentata</i> Clarke, 1875	NMB HMP	7-10	old shell, old cable, barnacles
<i>Orthopyxis caliculata</i> (Hincks, 1853)	KGI HMP	2-20	brown alga (<i>Ecklonia radiata</i>)
<i>Campanularia crenata</i> Hartlaub, 1901	KGI	12	red alga
<i>Campanularia pulcrathea</i> Mulder & Trebilcock, 1914	KGI	28	red alga (<i>Jeanerettia</i> sp.)
<i>Campanularia integra</i> MacGillivray, 1842	NMB GBI	15	red alga
<i>Campanularia gaussica</i> Stechow, 1923	NOR	15	bryozoan, brown alga
<i>Campanularia ambiplica</i> Mulder & Trebilcock, 1914	NMB	10	no record
<i>Clytia hemisphaerica</i> (Linnaeus, 1767)	KGI NMB HMP	10-30	mussels, barnacles, ascidians, red and brown algae, dead seagrass, man-made objects
	NOR		algae, especially <i>Phyllospora comosa</i>
<i>Silicularia rosea</i> Meyen, 1834	KGI GBI	10-30	
Family Syntheciidae			
<i>Synthecium patulum</i> (Busk, 1852)	KGI GBI NMB	22	sponge, ascidian (<i>Herdmania momus</i>)
Family Sertulariidae			
<i>Stereotheca elongata</i> (Lamouroux, 1816)	KGI NMB GBI	10-30	red algae
<i>Crateritheca crenata</i> (Bale, 1884)	NOR	10-12	bryozoan
<i>Salacia sinuosa</i> (Bale, 1884)	KGI NOR	15-35	bryozoan
<i>Salacia fenestrata</i> (Bale, 1884)	NOR	15	sheltered epilithic
<i>Thyroscyphus balei</i> (Calder, 1983)	KGI	5	bryozoa, ascidian
<i>Diphasia subcarinata</i> (Busk, 1852)	KGI	28	red alga (<i>Jeanerettia</i> sp.)
<i>Parascyphus simplex</i> (Lamouroux, 1816)	KGI	33	ascidian
<i>Amphisbetia operculata</i> (Linnaeus, 1758)	NMB KGI	55	old shell
<i>Amphisbetia minima</i> (Thompson, 1879)	KGI NMB GBI	3-12	ascidian (<i>Herdmania momus</i>), sponge,
<i>Amphisbetia minima</i> Bale, 1882	KGI	3	ascidian (<i>Herdmania momus</i>)
<i>Amphisbetia gracillima</i> (Bale, 1919)	FLI	54	fishing net
<i>Amphisbetia pulchella</i> (Thompson, 1879)	KGI	12-16	bryozoan
<i>Symplectoscyphus indivisus</i> (Bale, 1882)	KGI GBI	2-35	ascidian, red alga, brown alga
<i>Symplectoscyphus subdichotomus</i> (Kirchenpauer, 1884)	KGI NMB GBI	12	epilithic, algae
<i>Symplectoscyphus neglectus</i> (Thompson, 1879)	NOR	5-10	brown alga
<i>Symplectoscyphus epizoius</i> Watson, 1973	KGI	35	hydroid (<i>Aglaophenia divaricata</i>)
<i>Sertularia geminata</i> Bale, 1884	KGI	3-35	ascidian, red alga, hydroid (<i>Aglaophenia divaricata</i>)
<i>Sertularia turbinata</i> (Lamouroux, 1816)	KGI	27-30	red alga, brown alga (<i>Sargassum</i> sp.)
<i>Sertularia macrocarpa</i> Bale, 1884	KGI NMB	6-15	red algal holdfasts
<i>Sertularia marginata</i> (Kirchenpauer, 1864)	KGI NOR GBI	5-30	red alga (<i>Jeanerettia</i> sp.), brown alga (<i>Ecklonia radiata</i>)
<i>Sertularia unguiculata</i> Busk, 1852	KGI	2-30	brown alga
<i>Sertularia bicuspidata</i> Lamarck, 1816	KGI NOR	20	brown alga (<i>Sargassum</i> sp.)
<i>Sertularella simplex</i> (Hutton, 1873)	KGI GBI		
	HMP NMB	10-17	oyster (<i>Crassostrea angasi</i>), sponge, ascidian
<i>Sertularella robusta</i> Coughtrey, 1876	KGI HMP	10-20	barnacles
<i>Calamphora parvula</i> Allman, 1888	KGI	21	bryozoan
Family Plumulariidae			
<i>Pycnotheca producta</i> (Bale, 1881)	KGI NOR GBI	10	epilithic, bryozoan, seagrass (<i>Posidonia australis</i>)
<i>Antennella campanuliformis</i> (Mulder & Trebilcock, 1909)	NMB	12	epilithic
<i>Antennella secundaria</i> (Gmelin, 1792)	GBI	4-17	sponge, red algae, epilithic
<i>Halopteris buskii</i> (Bale, 1884)	KGI GBI NMB	12-30	ascidian (<i>Didemnum</i> sp.), epilithic
<i>Halopteris campanula</i> (Busk, 1852)	NMB	12	epilithic
<i>Plumularia setaceoides</i> Bale, 1882	KGI GBI	12	sponge, brown alga (<i>Cystophora</i> , <i>Ecklonia radiata</i>)
<i>Plumularia setacea</i> Ellis, 1755	NMB	9	epilithic, old shell
<i>Plumularia pulchella</i> Bale, 1882	KGI NMB GBI	20	ascidian (<i>Herdmania momus</i>) red alga
<i>Plumularia spinulosa</i> Bale, 1882	GBI	12	red alga, ascidian (<i>Herdmania momus</i>)
<i>Nemertesia waitisi</i> (Bale, 1887)	NMB	3-18	buoy ropes, old shell
Family Agalopheniidae			
<i>Halicornopsis elegans</i> (Lamarck, 1816)	GBI NMB KGI	14-17	epilithic
<i>Aglaophenia plumosa</i> Bale, 1882	KGI	3	brown alga, sponge
<i>Aglaophenia divaricata</i> (Busk, 1852)	KGI NMB GBI	15-23	epilithic
<i>Aglaophenia parvula</i> Bale, 1882	KGI NMB GBI	8-12	ascidians (<i>Herdmania momus</i> , <i>Pyura australis</i>), sponge, epilithic
<i>Aglaophenia bakeri</i> Bale, 1919	NOR	15	epilithic
<i>Aglaophenia sinuosa</i> Bale, 1888	GBI	24	epilithic
<i>Lytocarpus whiteleggei</i> (Bale, 1888)	KGI, NMB	12-15	epilithic
<i>Gymnangium longirostre</i> (Kirchenpauer, 1876)	KGI	12-16	epilithic, bryozoan
<i>Gymnangium superbum</i> (Bale, 1882)	KGI GBI	15	epilithic
<i>Gymnangium proliferum</i> (Bale, 1884)	GBI KGI	3-12	epilithic
<i>Gymnangium ilicistomum</i> (Bale, 1882)	KGI	20	red alga
<i>Gymnangium thetidis</i> (Ritchie, 1911)	GBI	12	epilithic
<i>Gymnangium ascidioides</i> (Bale, 1882)	KGI	16	epilithic
<i>Gymnangium aureum</i> Watson, 1973	GBI	23	epilithic

Recommended reading

General texts which describe hydroid morphology and provide information on common southern Australian species are: Australian Seashores. W. J. Dakin, revised by Isobel Bennett. (Angus & Robertson).

Marine Invertebrates of Southern Australia, Part I. Eds. S. A. Shepherd and I. M. Thomas. (Government Printer, South Australia.)

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